THE SILVER INSTITUTE LETTER

INFORMATION ON SILVER FOR INDUSTRY

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NEW PLUMBING? INSIST ON SILVER-TIN SOLDER!

In Norway, when a building contractor plans a new building, he routinely includes the use of silver-tin solder for making capillary joints in the building's plumbing installations. In West Germany, when a man builds his new home, he tells his plumbing contractor to use *only* silver-tin soldering with his copper piping. In Denmark, and in all Scandanavian countries, the Ministries of Housing insist that only one type of soft soldering alloy, namely silver-tin, be used for making joints in copper tubing which carries water in houses and buildings.

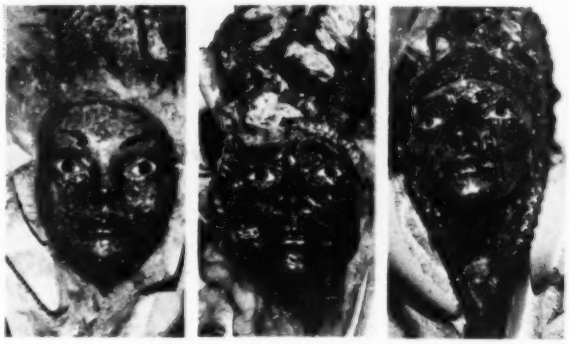
Why is there such insistance on the use of silver-tin solder in Germany and Scandanavia? There are several important reasons. But **of primary importance is the fact that silver-tin solder is non-toxic.** In addition, it is easier and quicker to apply (see upper photo), and is much stronger than other common, low temperature solders, according to Niels Gram, Director, **Paul Bergsøe & Søn A/S,** DK-2600 Glostrup, Denmark, a producer of silver-tin solder.

Insofar as cost is concerned, W.T. SanSouci of leading silver-tin solder manufacturer, J.W. Harris Co., 10930 Deerfield Road, Cincinnatti, Ohio 45242, notes that in a new home, there might be several thousand dollars worth of fixtures and copper piping and fittings, several hundred dollars worth of plumbing installation labor, and $20 worth of Harris **Stay-Brite** silver-tin solder (see lower photo) for as many as 100 copper tube and fitting joints. The equivalent amount of lead-tin solder might cost about $7 less. And mechanics who have used both types of solder report less time required in making the joints with silver-tin solder, with greater assurance of perfect joints. They point out that only *one* leaky joint can require much more cost in labor than the $7 difference in solder cost.

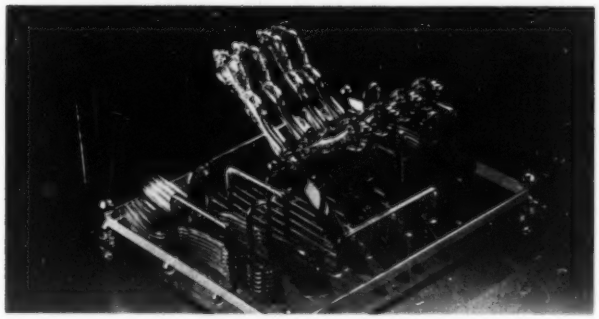
They also say that for some owners and buyers, the assurance of a water system which is made up only of silver, tin, copper and steel, justifies a premium in the value of the house which is *much* greater than the $7 difference in cost of the solder. In addition to Paul Bergsøe & Søn and J.W. Harris Co., other Silver Institute member firms manufacturing silver-tin soldering include **Federated Metals Corporation,** 150 So. Charles St., Newark, N.J. 07101 and **Engelhard Industries,** Route 152, Plainville, Mass. 02762, **Degussa,** D-6000 Frankfurt 1, Postfach 2644, Frankfurt (Main), West Germany and **DODUCO KG,** D-7530 Pforzheim, Postfach 480, West Germany.

PURE SILVER USED TO RECORD INDIAN ROYALTY OF THE AMERICAS

Sculptor Aurelio Teno of Spain chose the nobility of pure silver to portray the nobility of ancient Indian princesses of seven tribes of South America, Mexico and the United States. Three of the seven heads that were on display at the International Club of Washington, D.C. are shown at right. From left to right are the enameled silver heads of princesses of the Caracas of Venezuela, the Aztecs of Mexico and the Apaches of the American Southwest, each made with over 96 troy ounces of 99.9% pure silver.



NEW BUFFET CADDY FROM ONEIDA SILVERSMITHS



The new and very useful Buffet Caddy, shown at left, has been created by Oneida Ltd. Silversmiths, Oneida, N.Y. 13421 to help today's hostess conveniently and attractively arrange her sterling silver service on the buffet table, adding elegance and style to casual dining. This Buffet Caddy in silverplate measures 9″ × 11″ × 2½″ and holds up to twelve 5-piece place settings. Both gallery and rack are removable for easy cleaning. The Caddy retails at about $50.00.

CONTINUED GROWTH OF SILVER INSTITUTE

The Silver Institute welcomes to membership **The Metal Arts Company,** 230 Park Avenue, New York, New York 10017, with its Executive Vice President, Stanley J. Dahle, as its Official Representative in Institute affairs; and **Ames Goldsmith Corporation,** 21 Roger Street, Glen Falls, New York 12801, with Ronald F. Davies, President, as Official Representative. Since June 1980, The Silver Institute has increased its membership from 129 to 141 members.

The Silver Institute has members producing silver and silver products in 25 countries, including Argentina, Australia, Belgium, Bolivia, Brazil, Canada, Chile, Denmark, England, France, Germany, Honduras, India, Italy, Japan, Mexico, Nicaragua, Peru, Philippines, South Africa, Spain, Sweden, Switzerland, and the United States and Zaire.

HOW DID YOU STORE YOUR SILVER COINS?

If you carefully placed your gleaming proof silver coins in PVC (polyvinyl chloride) coin pockets or album pages before putting them in a safe deposit box, the next time you look at your proof silver coins, check for blue-green spots on coin edges or a "frosting" that covers the original mirror finish of proof coins.

Should you find spotting or "frosting" on your proof silver coins, there are ways of removing these results of reactions between coinage silver alloys and PVC. According to chemist Thomas W. Sharpless, Ph.D., ". . . dipping a spotted coin in acetone, ethyl acetate or other similar organic solvent of moderate polarity is effective for restoration. However, proof coins damaged by frosting in PVC require a somewhat more drastic treatment." Dr. Sharpless has found that "a five to twenty second dip in an acidified solution of thiourea (such as **"Instant-Dip Silver Cleaner",** Lewal Industries, Inc. 65 Plain Ave., New Rochelle, N.Y. 10801) effectively removes spotting and frosting."

Dr. Sharpless adds, "The coin should be rinsed well with water and then in methanol or distilled water to prevent "water spotting". The utmost caution must be taken to avoid rubbing the proof coin. Blot the coin dry with a clean turkish towel. Rubbing will almost certainly damage the mirror surface of proof coins." He cautions, "I recommend *against* the use of thiourea for other than proof coins."

In his Report, "Corrosion, The Problem of Storage", published in the October 1980 issue of **The Numismatist,** publication of the **American Numismatic Association,** Box 2366, Colorado Springs, Colorado 80901, Dr. Sharpless also suggested that until a more desirable polymer film becomes available, collectors can use containers, made of Dupont's **Mylar** (polyethylene terephthalate), which he says are strong, transparent and safe.

POLAROID'S NEW INSTANT HIGH SPEED ANALYSIS SYSTEM USES SILVER HALIDE FILM

Within a short time after the introduction of Polaroid's new system for instant high speed motion analysis, 25 companies–including Corning Glass Works, GTE Sylvania Corporation, General Electric, Gillette Safety Razor, Co., NASA-Lewis Center and Westinghouse–had purchased the system.

In the past, the turn-around times associated with conventional high-speed photography were simply too long to permit routine use in many industrial applications, so the advantages of

being able to film high speed events in vivid color at up to 300 frames per second, and allow slow motion analysis of the results on the spot only 90 seconds later, are apparent to many scientific and industrial photographers and production supervisors.

The new recording system, according to Maria Wilhelm of **Polaroid Corporation,** 549 Technology Square, Cambridge, MA 02139, includes two Polaroid Polavision Phototape Cassettes: Type 618, which is a professional self developing color motion picture film produced for the system; and Type 617, a higher speed, black and white Phototape designed for use in low ambient light levels. **Both types of films depend on silver halide emulsions to work their magic.**

The new silver halide films are used in the new Mekel 300 Instant Analysis Camera, and processed and viewed in the Polaroid Polavision Analyzer, as pictured. Images are recorded at precisely-selected speeds between four and 300 frames per second, and automatically processed and presented for study, in slow motion or frame-by-frame, or at any of five speeds up to 18 frames per second.

The Polaroid system offers several other advantages. It sells for 75% less than videotape systems, and is portable, self contained and simple to operate. It offers tremendous flexibility in industrial problem solving because it can be used on location by virtually anyone–regardless of prior photographic experience–with minimal training. And the presence of color in high speed motion analysis has proven to be of great utility to scientific and technical researchers, giving scenes and subjects a perception that simply can't be duplicated in black-and-white.

NEW ADVANCES IN PHOTOGRAPHY WITH SILVER

Most of the 26 important improvements in photography reported in the 1980 issues of New Silver Technology describe innovations in silver halide systems. Included however are exciting new systems such as the use of arsenious sulfide along with silver nitrate developed by **Zlafop Pri Ban** of Sofia, Bulgaria. When a film of arsenious sulfide is photographically exposed and briefly dipped into a silver nitrate solution, elemental silver is deposited on the unexposed areas leaving the exposed areas clear, thus directly forming a positive image for an ordinary photograph. With longer immersion in a silver nitrate solution, heavy silver deposits can be made in the form of flexible printed circuits for electronic equipment. The system can also be used for making lithographic plates for printing.

Advances in the use of silver along with arsenious sulfide are also being made by Dr. M.S. Chang and colleagues at the **University of Pennsylvania.** They have also applied the system to the making of extremely fine line microcircuits needed in the new generation of computers.

Eastman Kodak in Rochester, New York and **Asahi Chemical Industry Company** of Osaka, Japan can now make improved photographic films containing silver behenate, which require no wet chemical processing, but are quickly developed simply by heating them after photographic exposure.

Edwin H. Land of **Polaroid** has been awarded additional patents on improved "instant development" movie films. Also high speed silver halide color movie films used in photographing news events even with poor lighting, can now be quickly processed in a television studio to provide clear and distinct color televising according to a patent issued to David K. Bullock of **Philip A. Hunt Chemical Corporation** of Palisades Park, New Jersey.

David Kilcast of **Ciba-Geigy AG** of Basle, Switzerland has patented a silver-containing material to produce improved fast-developing microfilm for recording of computer data as sharp black characters on a fully transparent background.

LATEST SILVER INSTITUTE REFINING STATISTICS

Production and Disposition of **999 Silver Bars** by All Known Refiners in the United States

	TROY OUNCES	MILLION TROY OUNCES				
	November 1980	Nov 1980	Oct 1980	Jan-Nov 1980	Jan-Nov **1979	Full Yr 1979
THESE REFINERS' PRODUCTION, BY SOURCE		*MONTHLY RATE*				
From Primary (ores & concentrates)	2,132,066	2.1	1.8	3.3	4.8	4.8
From Coins	63,984	0.1	0.5	1.5	0.3	0.5
From Old Scrap (used photo film & other products)	5,348,309	5.3	5.7	6.2	5.1	5.2
From New Scrap (in-plant clippings, waste)*	3,033,545	3.0	2.6	2.7	2.1	2.3
TOTAL PRODUCTION	10,577,904	10.6	10.6	13.8	12.3	12.7
TOTAL PRODUCTION Less New Scrap*	7,544,359	7.5	8.0	11.1	10.2	10.4
ABOVE TOTAL PRODUCTION, BY OWNERSHIP						
From Refiners' Own or Purchased Materials	7,257,551	7.3	7.5	9.0	8.8	9.0
Refined on Toll for Others	3,320,353	3.3	3.1	4.8	3.5	3.7
DISPOSITION BY THESE REFINERS						
Converted in Plant (consumed in fabricating, etc.)	4,455,604	4.5	4.9	4.8	2.9	3.1
Shipped Out: Own materials	3,197,794	3.2	2.3	4.5	6.7	7.0
Against Tolls	2,752,456	2.8	3.1	4.6	2.5	2.7
TOTAL DISPOSITION	10,405,854	10.4	10.3	13.8	12.1	12.8
TOTAL DISPOSITION Less New Scrap*	7,372,309	7.4	7.7	11.1	10.0	10.5
RESULTING CHANGE OF THESE REFINERS' STOCKS (Production Minus Disposition)	+172,050	+0.2	*TOTAL FOR PERIOD* +0.3	−0.3	+1.9	−1.3
THESE REFINERS' STOCKS AT END OF PERIOD	1,242,542	1.2	1.1	1.2	4.7	1.6

Production and Disposition of **999 Silver Bars** by All Known Refiners in Australia, Canada, Mexico, Peru, South Africa and Sweden; and some other Refiners in Europe and Asia.

	TROY OUNCES	MILLION TROY OUNCES				
	November 1980	Oct 1980	Nov 1980	Jan-Nov 1980	Jan-Nov 1979	Full Yr 1979
THESE REFINERS' PRODUCTION, BY SOURCE		*MONTHLY RATE*				
From Primary (ores & concentrates)	11,419,501	11.4	13.1	12.1	12.7	12.7
From Coins	708	0.0+	0.0	0.1	0.0+	0.0+
From Old Scrap (used photo film & other products)	6,663,617	6.7	8.9	7.8	3.7	4.1
From New Scrap (in-plant clippings, waste)*	1,113,882	1.1	1.7	1.4	0.7	0.8
TOTAL PRODUCTION	19,197,708	19.2	23.7	21.4	17.1	17.6
TOTAL PRODUCTION Less New Scrap*	18,083,826	18.1	22.0	20.0	16.4	16.8
ABOVE TOTAL PRODUCTION, BY OWNERSHIP						
From Refiners' Own or Purchased Materials	15,929,762	15.9	19.4	17.5	14.8	15.2
Refined on Toll for Others	3,267,946	3.3	4.3	3.9	2.3	2.4
DISPOSITION BY THESE REFINERS						
Converted in Plant (consumed in fabricating, etc.)	4,976,444	5.0	7.6	7.3	4.0	4.3
Shipped Out: Own materials	10,863,588	10.9	10.6	10.4	11.1	11.3
Against Tolls	3,118,775	3.1	4.3	3.4	1.8	2.0
TOTAL DISPOSITION	18,958,807	19.0	22.4	21.1	16.9	17.6
TOTAL DISPOSITION Less New Scrap*	17,844,925	17.8	20.7	19.6	16.2	16.8
RESULTING CHANGE OF THESE REFINERS' STOCKS (Production Minus Disposition)	+238,901	+0.2	*TOTAL FOR PERIOD* +1.3	+3.9	+2.0	+0.4
THESE REFINERS' STOCKS AT END OF PERIOD	9,271,890	9.3	9.0	9.3	7.0	5.3

* PRODUCTION From New Scrap is 999 silver made from in-plant clippings, spillage, sweepings, etc., generated during manufacturing processes; since it is in continuous cycle from new scrap to 999 silver, to new scrap, some like to see the production and disposition totals after deducting the new scrap from both.

** Revised

THE SILVER INSTITUTE

A WORLDWIDE ASSOCIATION OF MINERS, REFINERS, FABRICATORS AND MANUFACTURERS

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